

SEQUENCE LISTING

<110> Huisman, Gjalt W.
Skraly, Frank A.
Martin, David P.
Peoples, Oliver P.

<120> Biological Systems for the Manufacture of
Polyhydroxyalkanoate Polymers Containing 4-Hydroxyacids

<130> MBX 017 PTO

<140> 09/156,809
<141> 1998-09-18

<150> 60/059,373
<151> 1997-09-18

<160> 18

<170> PatentIn Ver. 2.1

<210> 1
<211> 429
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: orfZ gene from
C. kluyveri

<400> 1
Met Glu Trp Glu Glu Ile Tyr Lys Glu Lys Leu Val Thr Ala Glu Lys
1 5 10 15

Ala Val Ser Lys Ile Glu Asn His Ser Arg Val Val Phe Ala His Ala
20 25 30

Val Gly Glu Pro Val Asp Leu Val Asn Ala Leu Val Lys Asn Lys Asp
35 40 45

Asn Tyr Ile Gly Leu Glu Ile Val His Met Val Ala Met Gly Lys Gly
50 55 60

Val Tyr Thr Lys Glu Gly Met Gln Arg His Phe Arg His Asn Ala Leu
65 70 75 80

Phe Val Gly Gly Ser Thr Arg Asp Ala Val Asn Ser Gly Arg Ala Val

85	90	95
Tyr Thr Pro Cys Phe Phe Tyr Glu Val Pro Ser Leu Phe Lys Glu Lys		
100	105	110
Arg Leu Pro Val Asp Val Ala Leu Ile Gln Val Ser Glu Pro Asp Lys		
115	120	125
Tyr Gly Tyr Cys Ser Phe Gly Val Ser Asn Asp Tyr Thr Lys Pro Ala		
130	135	140
Ala Glu Ser Ala Lys Leu Val Ile Ala Glu Val Asn Lys Asn Met Pro		
145	150	155
Arg Thr Leu Gly Asp Ser Phe Ile His Val Ser Asp Ile Asp Tyr Ile		
165	170	175
Val Glu Ala Ser His Pro Leu Leu Glu Leu Gln Pro Pro Lys Leu Gly		
180	185	190
Asp Val Glu Lys Ala Ile Gly Glu Asn Cys Ala Ser Leu Ile Glu Asp		
195	200	205
Gly Ala Thr Leu Gln Leu Gly Ile Gly Ala Ile Pro Asp Ala Val Leu		
210	215	220
Leu Phe Leu Lys Asn Lys Asn Leu Gly Ile His Ser Glu Met Ile		
225	230	235
Ser Asp Gly Val Met Glu Leu Val Lys Ala Gly Val Ile Asn Asn Lys		
245	250	255
Lys Lys Thr Leu His Pro Gly Lys Ile Val Val Thr Phe Leu Met Gly		
260	265	270
Thr Lys Lys Leu Tyr Asp Phe Val Asn Asn Asn Pro Met Val Glu Thr		
275	280	285
Tyr Ser Val Asp Tyr Val Asn Asn Pro Leu Val Ile Met Lys Asn Asp		
290	295	300
Asn Met Val Ser Ile Asn Ser Cys Val Gln Val Asp Leu Met Gly Gln		
305	310	315
Val Cys Ser Glu Ser Ile Gly Leu Lys Gln Ile Ser Gly Val Gly Gly		
325	330	335
Gln Val Asp Phe Ile Arg Gly Ala Asn Leu Ser Lys Gly Gly Lys Ala		

340

345

350

Ile Ile Ala Ile Pro Ser Thr Ala Gly Lys Gly Lys Val Ser Arg Ile
355 360 365

Thr Pro Leu Leu Asp Thr Gly Ala Ala Val Thr Thr Ser Arg Asn Glu
370 375 380

Val Asp Tyr Val Val Thr Glu Tyr Gly Val Ala His Leu Lys Gly Lys
385 390 395 400

Thr Leu Arg Asn Arg Ala Arg Ala Leu Ile Asn Ile Ala His Pro Lys
405 410 415

Phe Arg Glu Ser Leu Met Asn Glu Phe Lys Lys Arg Phe
420 425

<210> 2

<211> 52

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:

4-hydroxybutyryl CoA transferase (4HBCT) from C.
aminobutyricum

<400> 2

Met Asp Trp Lys Lys Ile Tyr Glu Asp Arg Thr Ala Ile Ile Ala Met
1 5 10 15

Pro Ser Val Ala Lys Asn Asp Ala Asp Tyr Val Val Thr Glu Tyr Gly
20 25 30

Ile Ala Glu Met Lys Ala Leu Ile Asn Ile Ala His Pro Asp Phe Lys
35 40 45

Asp Glu Leu Lys
50

<210> 3

<211> 1289

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: orzf gene from
C. kluyveri

<210> 4
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
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<400> 4
aggaggtttt tatg

14

<210> 5
<211> 45
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence:

oligonucleotide

<400> 5
ggctcgata atgtgtggag ggagaaccgc cgggctcgcg ccgtt

45

<210> 6
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide

<400> 6
ctagaacggc gcgagccgg cggttctccc tccacacatt atacgaggct gca

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<210> 7
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide

<400> 7
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26

<210> 8
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide

<400> 8
gtgacaacctt tatgacaggg gatgca

26

<210> 9
<211> 58
<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:
oligonucleotide

<400> 9

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<210> 10

<211> 56

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:
oligonucleotide

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<210> 11

<211> 44

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer

<400> 11

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44

<210> 12

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 12

tttctctgag ctcgggatat ttaatgattg tagg

34

<210> 13

<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 13
aacgaattca attcaggagg ttttatgga tcagacatat tctctggagt c 51

<210> 14
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 14
ttgggagctc tacagtaaga aatgccgttg g 31

<210> 15
<211> 55
<212> DNA
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<220>
<223> Description of Artificial Sequence: primer

<400> 15
taagagctca attcaggagg ttttatgga taagaagcaa gtaacggatt taagg 55

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<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 16
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<210> 17

<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 17
tccggatcca attcaggagg ttttatgaa cagcaataaa gagttaatgc ag

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<210> 18
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 18
gattctagat aggagcggcg ctactgcttc gcc

33